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Israel

EXPERIMENTS IN VOCATIONAL EDUCATION IN A DEVELOPING COUNTRY

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1. General Background

(a) Population

The total population of Israel in June 1962 was estimated by the Central Bureau of Statistics at 2,293,000. As characteristic features we want to stress the high rate of immigration, especially from under-developed countries; the age structure of the population, in which young people prevail; and the unbalanced distribution of the inhabitants throughout the country.

(i) Immigration and Immigrants:

Between 1882 and 1948 more than half a million immigrants arrived, about 90 per cent from Europe, and only 10 per cent from Africa and Asia. The immigration waves afterwards brought nearly one million new citizens, more than half of them from African and Asian countries. The immigrants of European origin from countries with high educational standard, many of them worked before their emigration from their home country as professionals. Up to Hitler's rise in Europe, there was a natural selection of emigrants: Mostly young people, whereas after the Second World War, Israel absorbed survivors of the Nazi Holocaust of any age and kind. Immigrants from oriental countries ranged from cave-dwellers in Morocco to peddlars, middle class merchants and low civil servants in Iraq, most of them with an incomplete elementary education and practically no vocational training or any technological experience at all. The families of these new immigrants were on the average considerably larger than families arriving from Europe.

(ii) Age Structure of the Population:

As up to 1935 mostly people in the age group 18 - 25 arrived in the country, and as since 1948 the percentage of oriental families with many children grew to decisive proportions, and as the well-developed health services in Israel keep the infant mortality one of the lowest in the world, we find the Israeli population among the youngest on earth.

According to the Central Bureau of Statistics, we find in May 1961 in the age group of

0 - 14	-	34.8%
15 - 29	-	21.2%
30 - 44	-	18.7%
45 - 64	-	20.0%
65 plus	-	5.3% of the population.

(iii) Geographical and Occupational distribution of the Population:

The figure of overall density of the population in the country - 106.2 per sq.Km. - is very misleading, as nearly 80% of the inhabitants are living in the northern half of the country. The rate of density in the southern half reaches only 11.8 per sq.Km. Thus, large areas of the country are uninhabited and represent a challenge especially for industrial development, independent from an abundant supply of water, which in the south is very scarce. As the pressure of immigration is

lasting and as the country is in heavy need of economics, especially industrial development for improving its trade balance and becoming more self-sufficient, settlement in/and productivization of these "Development areas" is encouraged by the Government.

About 64 per cent of the total population are living in towns, but an analysis of the occupational structure shows that in 1960 actually only 17.3 per cent of all employed persons worked in agriculture, forestry and fishing

About 11 per cent of the total population belong to minority groups (Moslem and Christian Arabs, Druze, etc.).

(iv) Economic Development:

For illustrating the trends of development we shall give some few examples:-

a. The growth of Israel Industry:

	1946	1959/60
No. of Enterprises	2,447	9,136
No. of Employed	46,960	128,300

b. Size of Establishments:

	Percentage			
	1955		1959	
	Persons engaged	Establish-ments	Persons engaged	Establish-ments
All size groups	100.0	100.0	100.0	100.0
1 - 4	10.1	44.6	10.1	49.1
5 - 9	14.1	27.9	12.2	25.9
10 - 14	8.3	9.1	6.9	8.2
15 - 24	11.9	8.5	8.9	6.7
25 - 69	15.5	5.9	13.6	5.6
50 - 99	11.6	2.3	13.2	2.7
100 - 299	18.o	1.4	16.3	1.3
300 and over	10.5	0.3	18.8	0.5

(b) Education

The high percentage of children and young persons in the Israeli Population is in many respects an asset only as long as it appears as an obligation as well; as long as society is conscious of the vitality of its commitments towards preparation of all these youngsters for a productive life as members of the community, according to its future needs and their potential abilities.

The answer to these two questions is in Israel obscure - inspite of the existing development plans - for lack of information about the rate of me chanization and automation, for lack of quantitative assessments of skilled workers according to trades and for the relative unreliability of many European and American testing methods, when applied to youth of Afro-Asian origin.

Therefore educational planning has to take into account the necessity of much flexibility up to a readiness for improvisation, a strong drive to risk well-founded experimentation, and a steady preparedness to correct, to give up and to build anew.

(i) Free Compulsory elementary education:

In 1949 Parliament passed a law of free compulsory education covering the ages 5 to 14 and divided in one year kindergarten and 8 years elementary school. School attendance among the Jewish youth reaches 98 per cent and among Arab boys 90 per cent.

(ii) Secondary education:

Only about 20 per cent of the graduates of elementary schools apply to the Employment Service for work - most of them looking for vacancies as craft apprentices whose training is protected by an Apprenticeship Law.

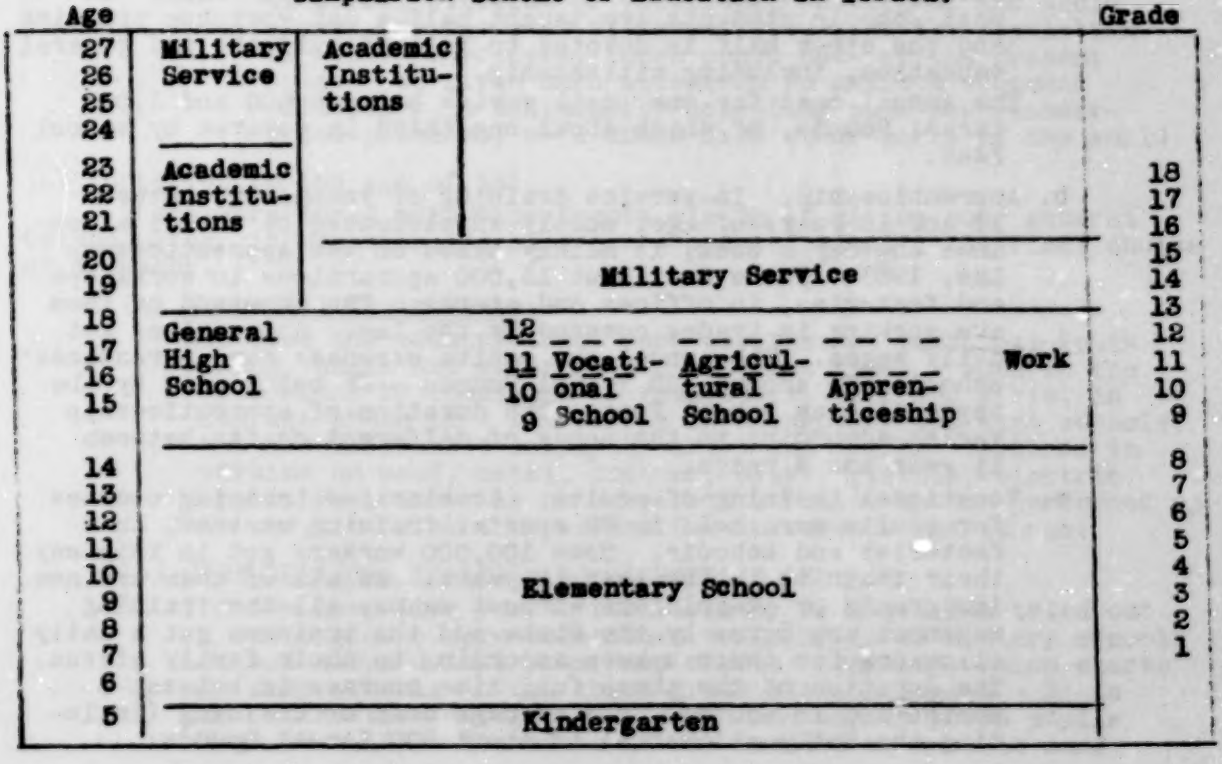
There are three main trends of secondary school:

General High School, with a 4-year curriculum, leading at an age of 18 up to academic maturity (matric);

Vocational School, giving two, three and four-year courses according to the trade, the levels of attainment or kind of specialization achieved;

Agricultural School, mostly boarding schools, with three and four-year courses.

Simplified Scheme of Education in Israel:



Nearly 80 per cent of the Israeli youth continue their education in secondary schools, but in the age group of 17-18 only about 30 per cent are in full-time educational institutions.

(iii) Higher Education:

Altogether there were in 1960/61 about 10,000 students in higher education in Universities and in the Haifa Technion.

(iv) Vocational Guidance:

Large scale vocational guidance is prepared by arts' and crafts' lessons which are held in elementary schools and carried out by employment counsellors in all offices of the employment service. No boy or girl is registered for work or apprenticeship in the Labour Exchange, without undergoing interviews with the counsellors who send more difficult cases to one of the Vocational Guidance Centres for testing. Some elementary schools make use of these Centres for carrying out group-tests for their pupils in higher classes. Handicapped persons are sent to special guidance committees and these too make use of the Vocational Guidance Centres.

(v) Vocational Education:

Vocational Education in Israel is performed in four main ways:

a. Vocational full-time schools. Fifty-two schools are dispersed all over the country and had in 1961/62 about 13,000 pupils. The Government is supervising them, holding final examinations, subsidising them and is granting scholarships. In most schools students are taught half a day workshop practice and the other half is devoted to related subjects and general education, including citizenship.

The annual cost for one pupil varies between 600 and 1,000 Israel Pounds, of which about one-third is covered by school fees.

b. Apprenticeship. In-service training of youngsters between 14 and 18 years of age, mostly supplemented by school attendance one day a week, is mainly based on the Apprenticeship Law, 1953. There are about 13,000 apprentices in workshops and factories, in offices and stores. Ten thousand of them are working in trades covered by the law. Apprentices get daily wages. The annual per capita expenses for apprentices' schools are around 125 Israel Pounds - 35 being paid by the apprentice as school fees. The duration of apprenticeship varies according to the needs of different crafts between 1½ year and 4 years.

c. Vocational training of adults. Accelerated training courses for adults were held in 22 special training centres, in factories and schools. Some 100,000 workers got in this way their training in the last 12 years. As all of them are new immigrants or ex-soldiers without means, all the training expenses are borne by the State and the trainees get a daily allowance for their upkeep according to their family status. The duration of the these full time courses is between 3 months and 18 months. The average cost of training (including the daily allowance) is about 900 Israel Pounds.

d. Supplementary training for upgrading. As the standard reached in accelerated training courses naturally cannot be very high, and as industry all the time suffered from a heavy lack of highly skilled workers, evening schools were established by the Ministry of Labour, in which every year 2,500 - 4,000 craftsmen are getting supplementary practical and theoretical training. About 50 - 60 per cent of the expenses are borne by the pupils.

2. Experiments in Vocational Education

(a) Special aims of experimenting with vocational guidance and education in Israel:-

(i) To find ways to make people at the earliest possible age familiar with materials, tools and processes and thus facilitate a choice of careers.

(ii) As there is a tendency among the Israeli population towards unproductive education, this way of familiarizing people with technology, should be as attractive as possible.

(iii) As many pupils are new immigrants, whose economic, social and cultural adjustment has not been completed at the time when they should start learning a trade, any system of vocational education has to include quite a share of general education, citizenship and languages.

(iv) Special stress was laid upon new ways of training which possibly would combine the advantages of different classical patterns of vocational education, and would answer the needs of different groups of the population as well. Therefore, there could not- at the present stage - be given much attention to maximum economic efficiency in training by accepting some few standardized patterns, well known from other parts of the world.

(b) Youth (up to the age of 18)

There were three main experiments aiming at giving some general technological information and experience and influencing the final choice of a career.

(i) Technical Youth Clubs:

All over the country there were established Technical Youth Clubs, which are attended two to three times a week in the afternoons by thousands of youngsters, boys and girls, in the age group 12 - 16, pupils in elementary and high schools, who are instructed mainly by arts' and crafts' teachers in working on wood, metal, leather, paper, plastic, electric appliances, etc. As no comparative follow-up was performed up to now, it is hard to assess the success of the scheme.

(ii) Prevocational training in Elementary schools:

For the last five years, the Ministry of Education tried out a new system of pre-vocational training in elementary schools. It was assumed that arts' and crafts' training, which starts in many schools in the third grade already (age 8 - 9) is not attractive enough for seventh and eighth grade pupils (age 12 - 14). Therefore it was decided to make it more

near to life by directing each class to a certain trade. General education was cut down from 30 hours a week to 28 hours. The total number of hours was raised to 40, including 10 hours workshop practice and two hours technical drawing. A follow-up showed that a percentage considerably higher than that of other pupils, wanted to commence their technical training after their graduation from elementary school, and remembering that this was the main purpose, the scheme was a success. But it should be kept in mind that cutting down general education in elementary schools is a serious step which might be harmful even from the point of view of further vocational education; that the scheme is rather expensive; that one should not expect from the pupils of this kind of prevocational training a considerable advantage for their future technical education; that a time-table of 40 hours a week, plus home-work seems to be rather crowded for 12 - 14 year old youngsters.

(iii) Two-year High schools - Technical trend:

The Ministry of Education and Culture introduced a two-years' curriculum in high schools for encouraging the parents of boys and girls who cannot afford the expenses for complete high school studies, or whose children seem not inclined or especially able for extended theoretical studies, to continue their schooling for another two years. In these two-years' schools, there are three trends: General, agricultural and vocational. In the vocational trend the pupils have 46 hours a week including 28 hours general education, 15 hours workshop practice and 3 hours related subjects. As graduates of these classes were found lacking in general education (compared with normal high school classes) and in vocational education as well, (compared with regular apprentices or ordinary vocational school pupils), it was decided to turn these classes into two-years' vocational schools.

Quite a number of new ways were tried out for enabling young people of different social and educational background and different capacities to find their way in life. Here we want to stress only the following:-

(iv) Pre-employment Apprenticeship Courses:

These courses were introduced because not all graduates of elementary schools are at the age of 14 able to stand the stress of the free labour market. An additional reason was the fact that vacancies for apprentices were scarce in many trades and the Ministry of Labour was interested in encouraging employers to take in more youngsters, by preparing them in advance. It was impossible to rely in Israel on the solution which was found in other countries, where large firms have their own apprentices' schools, as Israeli factories are generally much too small and economically not well enough based for facilitating the carrying out of so expensive projects. These courses are held in training centres for adults and in vocational schools for a period of three to twelve months. The costs amounting for a one-year course to about 500 Israeli Pounds per pupil. The pupils are paying a part as school fees, but 2/3 are up to now almost completely on the Government's shoulders. The week includes in most trades 46 hours of instruction: 32 hours workshop practice and 14 hours related subjects and general education.

This project proved to be very successful, as many parents find this bridge between school and the hardships of life useful in a country where ordinary compulsory education ends around the age of fourteen.

There was never any difficulty in finding vacancies for graduates of these courses. This success should not mislead the authorities into widening the range of these courses without fixing clear criteria. Otherwise they turn into subsidies to industries which should train their skilled manpower without enjoying the benefit of considerable public contribution.

(v) Sandwich Courses:

The Ministry of Labour tried in the Tel-Aviv area for some years a sandwich system of vocational education, which seemed to eliminate many of the dark sides of apprenticeship and those of full-time institutional education. All participants worked during their training period by turns - three months as apprentices in a workshop or factory and three months they were pupils in special classes in a vocational school. Thus one apprentice place was allocated to two boys, one of them always in school and the other in the workshop. The apprentices earned enough for paying their school fees and having left some pocket money, answering in this manner the needs of their own income, but were not dependent on their childrens' wages. The applicability of the scheme in Israel was from the very beginning limited as its usefulness is conditional to the existence of a sufficient number of apprentices and apprenticeship vacancies in the same trade and in the same stage of learning and teaching, for making it possible to build up homogenous classes on an economic basis. This seems possible in larger, highly industrialized towns only. The achievements reached by these pupils were astonishingly high, generally higher than those of the average apprentice and their sense of orientation, their readiness of adjustment to new situations compared favourably with those of vocational school graduates. It is too early to assess their prospect of progress as adult skilled workers. We learnt indeed, that the success of this kind of sandwich training depends on permanent, almost daily contact of the liaison officer with the boy, the workshop and the school - a budgetary as well as a manpower problem.

(vi) Adolescents' Training:

Two groups of youngsters induced Government to look for new solutions: Graduates of elementary school, who at the age of 16 or 17 were unsettled from an occupational point of view, and pupils of high schools, who dropped out after the first two or three years. Although it was conceivable to have special accelerated training courses for these boys and girls, it was decided against such a project, as a general solution, as at the age of 18 - after one to two years' training - all of them would have to serve in the Army for 2½ years and most of their newly acquired skill and knowledge would be lost by such a long break. Therefore, the Ministry of Labour established in consultation and in agreement with the Army, adolescents' courses only in civilian trades, in which the Army was interested too and ready to keep the young soldiers during their national service. The Army, as well as the labour exchanges are very satisfied and a solution was found for these youngsters. The pupils are kept in these courses till they are called up by the Army.

(vii) Vocational Youth Centres in Development areas:

A special employment problem exists in development areas, where plans for industrialization are in progress, but are not advanced enough for absorbing already the total potential labour force. As head of fa-

milies are naturally the first to be sent to work, young people are left behind. In these areas educational facilities above elementary school level are scarce. Thus 14 Youth Centres were set up in which boys and girls spend half a day working - mostly on Government works and are being paid for it. The other half is devoted to learning a trade or occupation, and supplementing their general education. As their final placement is not yet known and as industries in these areas will need machine operators and semi-skilled workers, many are prepared for their future occupational life by general technical education and by familiarizing them with working habits. They can stay in Centres up to two years, but whenever they find employment, they are free - and encouraged - to leave. For a transition period, these centres fulfil socially and educationally an important mission

(c) Adults.

Accelerated training courses for adults exist all over the country sponsored by the Ministry of Labour. As most of the families are new immigrants, the curriculum has to include general education subjects, especially languages, mathematics and citizenship.

(i) General Education:

Courses for adult candidates for crafts' training: As lately the employment situation improved and reached sometimes in certain places a point of lack of manpower, the choice of suitable candidates for training was limited and often it was impossible to find people with satisfying standard of general education for building sufficiently upon it modern vocational training. A boarding school was set up in which soldiers in the last three months of the period of their national service, get refresher courses in Hebrew, arithmetic and some other subjects of general education. It is yet too early to judge the results.

(ii) Training of Semi-skilled workers:

The new industries in development areas employ a large number of semi-skilled workers whose training can well be carried out "on-the-job". The process is however often hampered by lack of experience on the part of foremen. Sometimes productivity of the new workers is for many months so low that the new factory, working generally under unfavourable conditions, is unable to pay minimal wages. In these cases, the Ministry of Labour takes eventually the training programme under its auspices, sending from time to time its inspectors for consultations and paying for a limited time, part of the wages. Thousands of new workers found in this way permanent employment and new factories were able to build up in an efficient way a reliable staff of semi-skilled workers.

(iii) Observation Centre for the handicapped:

Whereas the ways of rehabilitation of disabled persons in Israel are rather conservative, following mainly the experience of other countries and adjusting it to local conditions, it was found that in the chain of vocational guidance facilities existing, one link was lacking: A Centre where physically and mentally handicapped persons could test their own strength, abilities and inclinations and where they could be observed and finally advised by an experienced team of instructors, physicians, psychologists, social workers, physio-therapists and employment counsellors. A Centre which was established and equipped with tools, machines and material, not on a trade basis but on the assumption that it should be adapted to basic manipulations which occur in various crafts and industries.

Disabled persons are generally accepted after the completion of their medical rehabilitation. All 85 persons who passed up to now the Centre, were before their entrance, for many months unemployed - some for years - living on a public assistance. Sixty seven found afterwards employment, following the advice of the team. It has to be stressed that almost all of them had already, without getting useful advice, passed the regular stations of vocational guidance. In the Observation Centre they were kept between two and six weeks. This scheme was found to be very successful and it was decided to open similar centres in other places.

(iv) Training of Foremen, Technicians and Instructors:

There would not be much justification in calling Israel training programmes for foremen, technicians and instructors, original or experimental. The experimental side one has to see in the concentration of these three training fields in one national institute, which seem especially suitable for poor, newly developing centres, lacking in highly skilled manpower. Personal and educational qualifications of candidates are similar, many study subjects that are common to all three types of curriculum; therefore, many teachers can be used by any trend of the institute. Even workshop and laboratory equipment is similar enough for being used by all three student bodies. Another advantage is the ease with which students can move from one trend to the other, if their former choice should prove wrong. In Israel such an Institute was established with the help of the Special Fund of the United Nations and with the assistance of the International Labour Organization. About 500 adult students are studying towards one of these careers. It is yet too early to draw conclusions, as only a few pupils finished their studies.

3. Further projects in stage of planning

(a) A plan for establishing in one of the new development towns a comprehensive school, including a general high school and a vocational school was worked out. The general high school will be run on two different levels only, one leading to matriculation. In the vocational school too, there will be two trends - the first stressing workshop practice and the second putting more weight on related subjects and general education. This type of institute is probably most suitable for small new immigrants' towns, where the number of children makes the maintenance of two or three different secondary schools impossible; where uncertainty in the choice of an aducational way makes flexibility imperative and where ambitions and prejudice of parents demand high school education - notwithstanding the manpower needs of the country or the abilities of their children.

(b) Industrialization of the development areas is not advanced enough for guaranteeing full employment in any case. On the other hand in many of these districts, there is full seasonal employment. The Ministry of Labour plans to establish in these areas pre-employment courses for adults during seasonal unemployment.

(c) It was decided to train in all elementary schools a certain number of teachers in elementary vocational guidance. These teachers will function under the supervision of fully trained psychologists. The first 60 teachers are now getting their training.

4. Conclusions

(a) Planning of vocational education is a function of manpower policy and general economic planning, taking into account demographic, social, psychological and general educational facts and conditions. Therefore, these plans, facts and conditions have to be well known and analysed before experiments in this field are undertaken. For that reason no conclusive decisions should be made without consultation between the different planning, economic, labour, statistic and educational authorities.

(b) In newly developing countries, in which the economic and technological future, the speed and direction of development is much more uncertain than in old established highly industrialized states, any blind sticking to principles taken over from other countries or read in books or heard from people, may be harmful. Other peoples' experience may be excellent raw material for independent thinking, but should never take the place of it.

(c) As other nations' experience should be known, but should not be taken over without critical screening and as newly developing countries are in the field of vocational guidance and education poor in tradition and own experience, there should be much readiness for experimenting, much courage to carry out experiments, to suffer disappointments and to correct mistakes and draw conclusions; governments should put at the disposal for experiments in vocational guidance and education, the necessary budget conscious of the much higher financial losses which might be incurred by unsuitable guidance and educational methods, leading in mild cases to exaggerated training periods and waste of manpower, in more drastic cases to inefficiency in production and damage to expensive equipment.

(d) In newly developing countries, where industry is not well established and not yet able to train all the skilled workers who will be needed tomorrow; where the financial reserves of the nation are generally too limited for training all skilled manpower in special schools, attention should be paid to training methods between exclusive on-the-job training by employers themselves and complete institutional vocational education paid mainly by the State. These methods were found very useful in the State of Israel and might, under similar economic, social and technological conditions prove suitable for others.

(e) As vocational education, like any education, can only flourish in a favourable public climate, the need cannot be overstressed for cooperation and coordination between different authorities in charge of it. The main question is not: who is responsible for vocational education. The cardinal problem is how to activate everybody concerned to participate in a constructive way - and who could be more concerned than the parents, the teachers, the children, the trade unions, the employers; in one word: the public ? ! Without their lively interest the best scheme must fail.

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